REMARKS

Claims 1-3 were rejected under 35 USC 102(b) as being anticipated by Bowers, US Patent Application Publication No. 2002/0126301 A1 (hereinafter, Bowers). Applicants respectfully request reconsideration of the rejection of claims 1-3 in view of the following.

Bowers discloses a process for determining the color calibration for a selected printer and selected substrate (paragraph 0015). Color patches are printed from a printer on a print substrate, and measured using a spectrophotometer or a calorimeter (paragraphs 0015, 0016). A lookup table (LUT) may optionally be created, which stores a difference value or an adjusted value between the measured predetermined input values and the measured color value, and the calibration data may be either or both of the raw data and the adjusted value (paragraph 0017). A pre-existing color LUT may be stored with the controller of the printer, and if not, one may be generated (paragraph 0018). The pre-existing color LUT may be replaced, modified or updated with a new color LUT, or an adjustment value may be added to the pre-existing color LUT (paragraph 0018). If the calibration data is raw data, the printer will have a LUT generated, and if the calibration data is a color LUT with adjusted color values, the printer will adjust the output values (paragraph 0019).

Applicants believe that claims 1-3 patentably define the invention over Bowers for at least the reasons that follow.

Applicants incorporate herein by reference their arguments set forth in their previous Amendment, electronically filed November 26, 2007.

Claim 1 is directed to a method for correcting color shift in an imaging system having an imaging object, and having a standard color conversion lookup table associated with said imaging object.

Claim 1 recites, in part, generating a signature color data lookup table based on said color data; and combining said signature color data lookup table with said standard color conversion lookup table to generate a composite color conversion lookup table for use with said imaging object.

As set forth in Applicants' previous Amendment, electronically filed November 26, 2007, a signature color data lookup table is defined as a table containing signature colors of an object (cartridge, scanner, substrate, etc.), which are a small set of colors that can be used to characterize the object, or to classify the object into a class of objects with similar color characteristics (see Applicants' specification from page 7, line 32 to page 8, line 4), and is much smaller than standard color conversion lookup table 62, allowing signature color data lookup table 64 to be stored in inexpensive, low capacity memory systems, and allowing for fast processing, as well as fast transference of color shift correction data between computer systems (see Applicants' specification at page 8, line 30-33).

The small set of colors that makes up the signature color data lookup table is obtained by measuring a plurality of test patches.

Although Bowers discloses measuring color patches to obtain either or both of raw data and adjustment data that is the difference between the predetermined input values and the measured color values (paragraph 0017), neither of the Bowers raw data and the Bowers adjustment data are a signature color data lookup table within the context of Applicants' claimed invention.

For example, Bowers discloses in paragraph 0019 that if the calibration data is raw data, such as predetermined input values and measured color values, then the printer will have a LUT generated.

Thus, the Bowers raw data is not a small set of colors that is much smaller than a color conversion LUT, but rather, is the full set of colors necessary to generate the LUT.

In the Response to Arguments, it is asserted that Applicants' assertion that the calibration data pertains only to the "full calibration data" should not be made, since Bowers also teaches that a "pre-existing color LUT" may also be modified.

Applicants have considered the Examiner's response, and address it as follows: with regard to *the Bowers raw data* (Applicants' will address the "pre-existing color LUT" separately), it is clear that the raw data is used to generate the LUT, which necessarily means that the raw data is the full set of colors, *not* a small set of colors that is much smaller than the color conversion LUT.

Regarding the Bowers adjustment data, Bowers discloses in paragraph 0017 that the "LUT stores a difference value or an adjusted value between the predetermined input values and the measured color value. The calibration data may be either or both the raw data and the adjusted value."

Bowers then goes on to disclose in paragraph 0019 that "If the calibration data comprises of a color LUT with adjusted color values, then the printer will immediately begin the calibration process of adjusting the output color value to be equal to the input color value."

However, the color LUT with adjusted color values is not disclosed, taught or suggested by Bowers to be a small set of colors used to characterize the object that is much smaller than the color conversion LUT, *but rather is the color conversion LUT itself*, and hence is also the full calibration data.

Although Bowers paragraph 0018 discloses that a pre-existing color LUT may be replaced, modified or updated with the LUT generated per Fig. 1, Bowers nonetheless does not disclose, teach, or suggest using a small set of colors used to characterize the object that is much smaller than the color conversion LUT to replace, modify or update the pre-existing LUT, and hence, does not disclose, teach, or suggest modifying or updating the pre-existing LUT with a signature color data lookup table.

In the Response to Arguments, it is asserted that because Bowers teaches in paragraph 0018 that a pre-existing color LUT may be modified, that "this may imply that *the new color LUT generated in Fig. 1* pertains to a "'partial calibration data' covering only a portion of the printer's color gamut."

Applicants respectfully disagree, and submit that there is no such implication that Fig. 1 or the balance of the Bowers disclosure pertains to partial calibration data that covers only a portion of the printer's color gamut. For example, Bowers is silent as to partial calibration data that covers only a portion of a printer's color gamut. Applicants respectfully submit that such assertion is tantamount to impermissible hindsight reconstruction using Applicants' specification as a blueprint, at least because *the Bowers disclosure does not support partial calibration that covers only a portion of a printer's color gamut.* Nor is it inherent in any manner that the Bowers scheme uses partial calibration data that covers only a portion of the printer's color gamut.

In addition, claim 1 was rejected under 35 USC 102(b), and as set forth in MPEP 2131, "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (Emphasis added). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)(Emphasis added).

Applicants respectfully submit that since the claim limitation "combining said signature color data lookup table with said standard color conversion lookup table to generate a composite color conversion lookup table for use with said imaging object," is not expressly or inherently described in the Bowers reference, since the identical invention is not shown in Bowers in as complete detail as is contained in the claim, claim 1 is not anticipated by Bowers

Applicants would like to emphasize a significant aspect of Applicants' invention is that, rather than storing a full color conversion LUT or the raw data associated therewith, Applicants' invention employs a small set of colors used to characterize the object that is much smaller than the color conversion LUT, which Applicants explicitly refer to as signature colors and a signature color data lookup table.

Because the signature color data lookup table is a small set of colors used to characterize the object that is much smaller than the color conversion LUT, *the signature color data lookup table may be stored in inexpensive, low capacity memory systems, and allowing for fast processing, as well as fast transference of color shift correction data between computer systems,* *e.g., via networks, as well as between computer system components* (Applicants' specification from page 8, line 30 to page 9, line 2).

These advantages are not achieved by the Bowers apparatus, at least because Bowers does not disclose, teach, or suggest the knowledge of using only a small set of colors to modify a color conversion LUT, but rather, Bowers stores the full set of colors in the cartridge memory.

Although Bowers discloses that a pre-existing color LUT may be replaced, modified or updated (paragraph 0018), Bowers does not disclose, teach, or suggest the concept of replacing, modifying or updating the pre-existing color LUT using only a small set of colors used to characterize the object that is much smaller than the color conversion LUT.

Nowhere does Bowers mention that the pre-existing color LUT may be replaced, modified or updated using only a small set of colors used to characterize the object that is much smaller than the color conversion LUT.

Instead, Bowers is merely concerned with putting color data in the memory of an ink cartridge so that a customer doesn't have to measure color inks using a spectrophotometer or colorimeter (paragraphs 0004 and 0005), without disclosing any additional concept relating to using only a small set of colors to characterize the object that is much smaller than the color conversion LUT.

As set forth in MPEP 2111, the Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1). *Phillips v. AWH Corp.* 415 F.3d at 1316, 75 USPQ2d at 1329. See also In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). (Emphasis added).

Since Applicants define that the signature color data lookup table pertains to a small set of colors used to characterize the object that is much smaller than the color conversion LUT, which is not disclosed, taught or suggested by Bowers, Applicants respectfully submit that Bowers does not anticipate claim 1.

Claim 1 is thus believed allowable in its present form.

Claims 2 and 3 are believed allowable due to their dependence, directly or indirectly, on otherwise allowable base claim 1. In addition, claims 2 and 3 further and patentably define the invention over Bowers.

Accordingly, for at least the reasons set forth above, Applicants believe that claims 1-3 are in condition for allowance in their present forms, and thus respectfully request that the rejection of claims 1-3 under 35 U.S.C. 102(b) be withdrawn.

Claims 4-7 were rejected under 35 USC 103(a) as being unpatentable over Bowers in view of Chu, et al., US Patent Application Publication No. 2002/0149785 A1 (hereinafter, Chu). Applicants respectfully request reconsideration of the rejection of claims 4-7 in view of the following.

Chu discloses that an ink cartridge manufacturer characterizes a color ink cartridge 124 by curve fitting density data, and that curve fitted density data is stored in association with a cartridge identifier 140 on a website 118 (paragraph 0021). If the website determines that the cartridge identifier 132 from the user computer system 100 matches the cartridge identifier 140 from the factor computer system 136, then the curve fitted density data 120 associated with the cartridge identifier 140 is transmitted over the Internet 122 to the user computer system 100 (paragraph 0023). Website 118 can be used to maintain multiple sets of ink cartridge characterization data and associated cartridge identifier data for each model of ink cartridge so that ink cartridge characterization data for any ink cartridge can be retrieved over the Internet (paragraph 0024).

Applicants believe that claims 4-7 patentably define the invention over Bowers and Chu, taken alone or in combination, for at least the reasons that follow.

Applicants incorporate herein by reference their arguments set forth in their previous Amendment, electronically filed November 26, 2007.

Claims 4-7 are believed allowable due to their dependence on otherwise allowable base claim 1, since Bowers does not disclose, teach, or suggest the subject matter of claim 1, as set forth above, and since Chu does not make up for the deficiency of Bowers as with respect to claim 1, nor is it so asserted.

In addition, claims 4-7 further and patentably define the invention over Bowers and Chu, taken alone or in combination.

For example, claim 4 is directed to the method of claim 2, wherein the generating step includes generating a plurality of signature color data lookup tables for a plurality of imaging objects; subdividing the plurality of signature color data lookup tables into classes of signature color data lookup tables based on a color similarity; generating a color class table for each class of signature color data lookup tables; assigning a class code to each color class table; storing each color class table in at least one of a first memory associated with the imaging object, a second memory associated with the imaging system, and an offsite memory, for access by the imaging system; and storing the class code in at least one of the first memory associated with the imaging object, the second memory associated with the imaging system, and the offsite memory, for access by the imaging system.

While Chu discloses that website 118 can be used to maintain multiple sets of ink cartridge characterization data and associated cartridge identifier data for each model of ink cartridge so that ink cartridge characterization data for any ink cartridge can be retrieved over the Internet (paragraph 0024), Chu does not disclose, teach or suggest classes of signature color data lookup tables based on a color similarity, much less generating a color class table for each class of signature color data lookup tables, as recited in claim 4.

In addition, Chu does not disclose, teach or suggest assigning a class code to each color class table, but rather, stores individual ink cartridge identifiers for ink cartridges with corresponding characterization data without establishing classes of characterization data and class codes corresponding thereto. Chu simply does not disclose, teach or suggest the aspect of claim 4 pertaining to classes, such as for classifying an ink cartridge into classes of ink cartridges with similar color characteristics (see Applicants' specification from page 7, line 32 to page 8, line 1), such as what the signature color data is used for in the embodiment of claim 4.

In the Response to Arguments, it is asserted that differences between various types or models of printing cartridges inherently classifies or differentiates the cartridges.

However, Applicants respectfully direct the Examiner's attention to Applicants' specification at page 6, line 31 to page 7, line 14, Applicants' specification makes clear that the present invention pertains to imaging objects of the same type, *not* different types or models.

Further, Applicants' specification states that with the "class" method, imaging objects 21 are subdivided into classes according to their color reproduction characteristics, not merely based on having the same ink colors.

Still further, the language of claim 4 makes clear that claim 4 does not merely pertain to classifying color cartridges into one class and black cartridges in another class, etc., as asserted by the Examiner.

Rather, Applicants respectfully submit that the Examiner has over-simplified and mischaracterized Applicants' invention in a manner that does not reflect the invention of claim 4.

Also, as set forth in Applicants' specification, the present invention corrects for color *shift*, i.e., the color shift caused by differences between imaging objects of the same type (Applicants' specification at page 7, line 2) due to manufacturing and assembly tolerances, subcomponent tolerances, the use of different manufacturers or different manufacturing lots, dye variations in substrates, substrate composition variations, variations in substrate light absorption and/or reflection characteristics, variations in imaging system 10 ambient temperature and/or humidity that may affect a substrate's performance, etc. so that imaging objects of the same type may be used to provide consistent color reproduction (Applicants' specification at page 7, lines 5-14),

Thus, rather than pertaining to classifications into color vs. black ink, etc., the color shift correction performed by certain embodiments of the present invention pertains to classifying imaging objects into classes based on variations that might cause the color output to shift, such as the different variations listed in the preceding paragraph.

Thus, in the context of Applicants' specification, it is clear that the classes referred to in claim 4 are not merely tri-color cartridges vs. black cartridges, but rather, classes of cartridges of the same type, wherein the color shift correction compensates for differences in those cartridges of the same type.

As set forth in MPEP 2111, the Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1). *Phillips v. AWH Corp.* 415 F.3d at 1316, 75 USPQ2d at 1329. See also In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). (Emphasis added).

Since the cited references, taken individually or in combination, do not disclose, teach, or suggest wherein the generating step includes generating a plurality of signature color data lookup tables for a plurality of imaging objects; subdividing the plurality of signature color data lookup tables into classes of signature color data lookup tables based on a color similarity; generating a color class table for each class of signature color data lookup tables; assigning a class code to each color class table; storing each color class table in at least one of a first memory associated with the imaging object, a second memory associated with the imaging system, and an offsite memory, for access by the imaging system; and storing the class code in at least one of the first memory associated with the imaging object, the second memory associated with the imaging system, and the offsite memory, for access by the imaging system, as interpreted in light of Applicants' specification by one of ordinary skill in the art, Applicants respectfully submit that claim 4 is allowable over the cited references, taken alone or in combination.

Accordingly, Bowers and Chu, taken alone or in combination, do not disclose, teach or suggest the subject matter of claim 4.

Claims 5-7 are believed allowable due to their dependence on otherwise allowable intervening claim 4. In addition, claims 5-7 further and patentably define the invention over Bowers and Chu, taken alone or in combination.

Accordingly, for at least the reasons set forth above, Applicants believe that claims 4-7 are in condition for allowance in their present forms, and thus respectfully request that the rejection of claims 4-7 under 35 U.S.C. 103(a) be withdrawn.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the pending claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorize that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (317) 894-0801.

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Electronically Filed: April 18, 2008

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